

Swiss paediatrician survey on complementary medicine

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Summary

BACKGROUND: In Switzerland, complementary medicine (CM) is officially recognised within the healthcare system and mainly practised in an integrative manner, in conjunction with conventional medicine. As in other countries, there is high demand for and use of CM with children. However, there has so far been no research into the attitude towards, training in and offer of CM among paediatricians in Switzerland. Our study addresses this gap by investigating these topics with an online survey of paediatricians in Switzerland.

METHODS: We conducted a national online survey using a 19-item, self-reporting questionnaire among all ordinary and junior members of the Swiss Society of Paediatrics (SSP). A comparison of the study sample with the population of all paediatricians registered with the Swiss Medical Association (FMH) allowed an assessment of the survey's representativeness. The data analysis was performed on the overall group level as well as for predefined subgroups (e.g. sex, age, language, workplace and professional experience).

RESULTS: 1890 paediatricians were approached and 640, from all parts of Switzerland, responded to the survey (response rate 34%). Two thirds of respondents were female, were aged between 35 and 55 years, trained as paediatric generalist and worked in a practice. Apart from young paediatricians in training, the study sample was representative of all Swiss paediatricians. 23% had attended training in CM, most frequently in phytotherapy, homeopathy, acupuncture/traditional Chinese medicine (TCM) and anthroposophic medicine. 65% were interested in CM courses and training. 16% provide CM services to their patients and almost all paediatricians (97%) are asked by patients/parents about CM therapies. More than half of the responding paediatricians use CM for themselves or their families. 42% were willing to contribute to paediatric CM research.

CONCLUSIONS: In a representative sample of paediatricians in Switzerland, their personal attitude towards CM is positive, emphasised by great interest in CM training, a

willingness to contribute to CM research and a high rate of paediatricians who use CM for themselves and their families. In contrast, the percentage of paediatricians offering CM is currently rather low despite strong demand for CM for children. This study provides key pointers for the future development of complementary and integrative medicine for children in Switzerland.

Keywords: paediatrics, complementary medicine, integrative medicine, Switzerland, survey

Introduction

The term complementary medicine (CM) summarises all diagnostic, therapeutic and preventive methods that are used in conjunction with conventional Western medicine [1]. The blending of complementary and conventional strategies to include all appropriate therapies in a patient-centred fashion, with a focus on interprofessional collaboration, is described as “integrative medicine” [2, 3]. This integrative approach is gaining ever greater recognition worldwide. Integration is characteristic of how CM is practised by medical doctors in Switzerland, where the combination of conventional and complementary medicine is carried out by highly qualified medical specialists with additional training in CM.

Switzerland offers a unique opportunity to study integrative medicine because of its particular socio-political situation. The Swiss electorate has twice underlined its strong demand and support for CM within the population, including children [4–7]. In referendums in 1994 and in 2009, it voted to have CM reimbursed by basic mandatory health insurance [8]. In June 2017, the Swiss health care authorities approved the – initially provisional – reimbursement of CM by basic health insurance for four CM methods. This final approval is without temporal limitation and applies to traditional Chinese medicine (TCM), anthroposophic medicine, homeopathy and phytotherapy (herbal medicine) [9]. Formal standardised training curricula for medical doctors are established for these four CM methods. The Swiss Institute for Postgraduate and Further Education in Medicine, SIWF [10], is responsible for certification, which is

Author contributions
BMH designed the study and coordinated the whole project. JW established the connection to the Swiss Society of Paediatrics. BMH developed the questionnaire in collaboration with all other authors. UW designed the online version of the survey and collected the data. BMH and UW performed the analysis. BMH wrote the manuscript. All authors revised the manuscript and approved the final version of the manuscript as submitted.

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required to receive specific reimbursement for CM services.

Despite the increase in the acceptance and dissemination of CM in Switzerland, Swiss paediatricians' attitude to CM, i.e. their position and general opinion on CM, has not been investigated so far. Data on paediatrician attitudes exist from the USA [11–14], the Netherlands [15, 16] and Oman [17]. It is also unknown how many paediatricians in Switzerland have attended additional training in one or more CM methods. The register of the Swiss Medical Association (FMH) only provides information on the number of physicians specialised in paediatrics who have a federal CM certificate. This could, however, underestimate the actual number of paediatricians with additional CM training. This question can only be solved by asking the paediatricians directly.

The reported use of CM is generally high in paediatrics [18, 19], particularly for children with chronic illnesses [20]. However, it is unknown whether CM services in the paediatric inpatient and outpatient sectors in Switzerland respond to this strong demand for CM for children. None of the studies investigating the supply of CM by physicians in Switzerland have included paediatrics [21–23]. The present study was therefore carried out to evaluate the attitude towards, training in and the offer of CM among paediatricians in Switzerland.

Material and methods

We conducted a national exploratory study among paediatricians in Switzerland using a structured, self-reporting, anonymous online survey. A questionnaire was developed by the authors based on surveys from similar studies [12, 13, 15], taking into account the specific conditions in Switzerland. The online tool SurveyMonkey® was used to create and conduct the survey. Preliminary testing of the questionnaire by four paediatricians from different regions of Switzerland (two from a hospital setting and two from private practice) helped us to fine-tune the survey. The 19-question survey, provided in the three official languages of Switzerland (German [Appendix 1], French and Italian), addressed the following topics: demographic data; training in paediatrics, including subspecialty; training in CM (any CM courses, seminars or workshops attended by the paediatrician, including completed CM training with or without a federal certificate from the SIWF or equivalent); personal (use of CM by respondents themselves or within their own family) and professional (discussing CM with patients/parents/colleagues) experience with CM; provision of CM medical services (offering CM to their patients) and/or referral practice concerning CM; interest in information about and training in CM; and interest in research on CM. For each question on CM, a list of five types of CM was provided: acupuncture/TCM, anthroposophic medicine, homeopathy, neural therapy and phytotherapy. As there are also other forms of CM (without federal certificates from the SIWF) practised by physicians in Switzerland, respondents were given the opportunity to add additional CM methods (multiple answers were possible).

The board of the Swiss Society of Paediatrics (SSP), the national paediatric society and the professional organisation for all paediatricians in Switzerland, approved the study and agreed to use the SSP member list for the survey.

All ordinary SSP members (certified paediatricians) and junior SSP members (paediatricians in training) were included (n=1,890). Retired, extraordinary, corresponding and honorary members were not included. To ensure anonymity, members of the research group had no direct access to the list and the secretary of the SSP carried out the online dispatch of the survey. The ethics committee of the Canton of Vaud confirmed that no ethics committee approval was needed as we were performing an anonymous survey of medical professionals without investigating patient data or medical interventions.

A link to the online survey was sent by email in March 2017 and was followed by a reminder in April 2017. Responses had to be returned by the end of May 2017. Participation was voluntary and anonymous. The time required to fill in the questionnaire was 5–10 minutes. Data analysis was based on all responses, even if some items were answered incompletely. An abstention was accepted as a response option. To obtain detailed insights into the paediatricians' attitudes towards CM, the analysis of the whole sample was followed by a predefined subgroup analysis according to sex (female vs. male), age (≤ 45 years vs. ≥ 46 years), language (German vs. French vs. Italian), workplace (hospital vs. practice), and professional experience (head of department vs. junior residents).

Descriptive statistics were used to summarise the responses to the individual questions and to present the results of the different subgroups. To assess the representativeness of the study sample, we descriptively compared the characteristics of the participating paediatricians to those of all paediatricians registered with the Swiss Medical Association (FMH) at the time of the study. We used the FMH registry because demographic data for all members of the SSP were not available. A difference of more than 50% was arbitrarily set as a meaningful divergence.

Results

Overall, 1890 members of the SSP were approached and 640 (34%) responded to the survey. The workplaces of the responding paediatricians were distributed over all parts of Switzerland (fig. 1). Demographic details of the participants are shown in table 1, which also contains the data used to estimate representativeness. Compared to the population of paediatricians registered to the Swiss Medical Association (FMH), our study sample included more paediatricians <35 years, more in training and more working as junior residents, as well as a lower number of paediatricians >65 years of age. No other relevant differences were found.

Among participating paediatricians, 23% had attended training in CM, most frequently in phytotherapy (38%), homeopathy (36%), acupuncture/TCM (33%), anthroposophic medicine (16%) and hypnosis (9%). Only 8% had a federal certificate in one or more CM methods [overall 29 certificates: acupuncture/TCM (10), homeopathy (9), anthroposophic medicine (6), phytotherapy (3), neural therapy (1)]. Overall, 63% were interested in CM training and courses on CM issues.

Fifty-four percent of the respondents did not routinely ask their patients about their use of CM. Conversely, only 3% of paediatricians were never asked by their patients about

CM therapies. Of the 97% who were being asked, 44% were asked seldom (< once a week), 43% sometimes (> once a week but < once a day), and 10% frequently (> once a day).

Eighty-four percent of responding paediatricians did not offer CM, for a variety of reasons: 66% indicated insuf-

ficient knowledge, 23% considered CM not to be meaningful/reasonable, and 11% stated that it is not possible to practise CM at their current workplace (e.g. hospital). Those paediatricians providing CM to their patients (16%) mentioned 27 different CM methods altogether. The forms of CM most frequently offered (multiple answers were

Figure 1: Switzerland and its cantons, regional workplace distribution indicated by respondents to the survey.

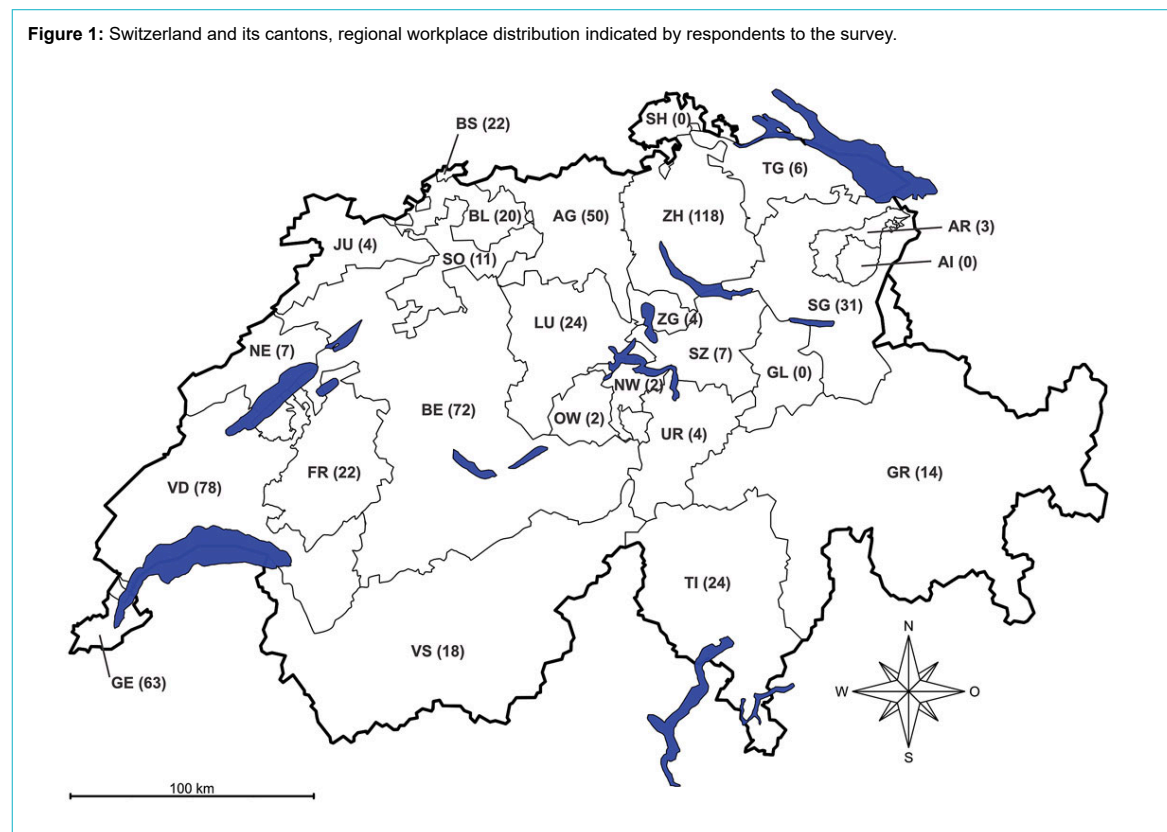


Table 1: Characteristics (percentage*) of paediatricians participating in the survey ("study sample") and of all paediatricians registered with the Swiss Medical Association (FMH) at the end of 2016 ("all paediatricians").

Characteristics		Study sample (n = 640)	All paediatricians (n = 1880)
Gender	Female	399 (62%)	1121 (60%)
	Male	219 (34%)	759 (40%)
	Unknown	22 (3%)	–
Age (years)	<35	99 (15%)	129 (7%)
	35-45	233 (36%)	653 (35%)
	46-55	164 (26%)	575 (30%)
	56-65	117 (18%)	372 (20%)
	>65	14 (2%)	151 (8%)
	Unknown	13 (2%)	–
Position	Junior resident	77 (12%)	63 (3%)
	Attending	89 (14%)	227 (12%)
	Senior attending	54 (8%)	141 (8%)
	Head of department	36 (6%)	60 (3%)
	Primary care paediatrician	376 (59%)	1087 (58%)
	Unknown	8 (1%)	284 (15%)
Type of paediatrician	Paediatrician in training	59 (9%)	63 (3%)
	Paediatric generalist	417 (65%)	1362 (72%)
	Paediatrician with sub-specialisation	142 (22%)	455 (24%)
	Unknown	32 (5%)	–
Place of work	Hospital	198 (31%)	775 (41%)
	Practice	385 (60%)	1087 (58%)
	Both hospital and practice	36 (6%)	–
	Unknown	24 (4%)	18 (1%)

* Percentages may add up to more or less than 100% owing to rounding.

possible) were phytotherapy (42%), homeopathy (24%), acupuncture/TCM (9%), anthroposophic medicine (7%), osteopathy (3%), hypnosis (3%) and kinesiology (2%). More than half of the respondents (53%) sometimes (< once a month, 85%) or regularly (> once a month, 15%) referred patients to CM practitioners offering the following CM therapies (multiple answers possible): homeopathy (35%), acupuncture/TCM (24%), phytotherapy (11%), osteopathy (10%), anthroposophic medicine (8%), craniosacral therapy (2%), and neural therapy (2%).

More than half of the participating paediatricians reported using CM for themselves (58%) or their immediate families (51%) (table 2). 71% of respondents were in favour of an official Swiss working group for paediatric CM/integrative paediatrics, in line with the Section on Integrative Medicine of the American Academy of Pediatrics (AAP). Among these, 73% were in favour of the group being integrated within the SSP and 27% would prefer such a group to be independent of the SSP. Finally, 42% of the responding paediatricians were in favour of research projects in the field of paediatric complementary and integrative medicine, and declared their willingness to contribute to them.

Details of the subgroup analysis are shown in table 3. There were some important findings that merit further exploration. While there was no difference in training in CM among male and female paediatricians, female respondents provided CM services more often, referred more patients to CM providers, reported more personal and family use of CM, were much more interested in CM training and were more willing to contribute to paediatric CM research compared to male respondents. Younger paediatricians (≤ 45 years of age) had attended fewer CM trainings, offered less CM to their patients and referred fewer patients to CM providers. However, their interest in CM training and willingness to contribute to research was higher than that of older paediatricians (≥ 46 years of age). Paediatricians working in hospitals had less training in CM but reported equal interest in CM training. Paediatricians in private practices reported more personal and family use of CM and provided CM services to their patients more often. Paediatricians in both hospitals and private practices reported a similar level of demand for CM therapies by patients/parents. Junior residents were more interested in CM training and research, and indicated more personal use of CM. Junior residents reported also more frequently institutional barriers at their current workplace as being responsible for not offering CM. Concerning the language of the responding paediatricians, CM was offered more often by French

and Italian-speaking paediatricians, even though they indicated less CM training. There were no differences in the personal and family use of CM among paediatricians between the three language groups. Finally, with the exception of the Italian-speaking subgroup, the majority were in favour of a working group for integrative paediatrics in Switzerland in all other subgroups.

Discussion

This is the first national survey on CM among paediatricians in Switzerland. While information on training and the offering of CM can be requested directly, attitudes towards CM are inferred from a combination of multiple parameters, such as interest in CM training and research, discussion about CM with patients, provision of CM services, practice regarding referral to CM providers, and especially, personal and family use of CM.

Nearly a quarter of paediatricians in Switzerland (23%) have attended training on CM, yet only 8% had acquired a federal SIWF certificate in one or more CM methods. This is below the rate for general practitioners in Switzerland, where 14% of physicians were qualified in at least one CM discipline [22]. It contrasts with the expressed high interest in CM training at paediatric congresses and seminars or as part of regular paediatric training programmes. Remarkably, this interest was declared by the majority of respondents in all subgroups, with the exception of male paediatricians. Yet even among them, 50% were interested in further CM training. In addition, this interest was equally high among those working in hospitals and in private practices, and is therefore not only an issue for the training of primary care physicians in an outpatient setting. These results are in line with those published previously, where paediatricians have expressed the need for more training in CM in different surveys, with rates between 50 and 88% [11–14]. The positive attitude towards training in CM shown in our sample from Switzerland should be considered in the development of programmes for continuing medical education in paediatrics at undergraduate and postgraduate levels, as well as in the planning of future paediatric congresses. The formal integration of complementary medicine in the curricula of Swiss medical schools can be considered as an important step in this direction [24].

The demand for and use of CM for children [3, 18, 19] is reflected indirectly in our study by the fact that almost

Table 2: Complementary medicine (CM) methods used by paediatricians and their immediate families (percentage of all responses).

No.	Personal use of CM by paediatricians	CM used for paediatrician's family
1	Phytotherapy (27%)	Phytotherapy (29%)
2	Homeopathy (27%)	Homeopathy (29%)
3	Acupuncture/TCM (27%)	Acupuncture/TCM (22%)
4	Anthroposophic medicine (6%)	Anthroposophic medicine (9%)
5	Neural therapy (2%)	Neural therapy (3%)
6	Osteopathy (2%)	Osteopathy (3%)
7	Craniosacral therapy (<1%)	Craniosacral therapy (<1%)
8	Essential oils (<1%)	Essential oils (<1%)
9	Ayurvedic medicine (<1%)	Ayurvedic medicine (<1%)
10	Flowers of Bach (<1%)	Chiropractitioner (<1%)

TCM = traditional Chinese medicine

all respondents (97%) were asked quite regularly by patients or their families about complementary therapies. Despite this strong demand, CM services are only provided by a minority of paediatricians in Switzerland (16%). This is above the rate of CM service offered by paediatricians

(7%) [15] and youth health care physicians (9%) [16] in the Netherlands, but below the rate reported by the American Academy of Pediatrics (AAP) (30%) [13]. It is also lower than the general rate of CM service provision amongst general practitioners in Switzerland (30%) [22].

Table 3: Results from the overall sample and the subgroup analysis.

	Overall sample (n = 640)	Subgroups according to										
				Gender		Age		Workplace		Language		
		Male (n = 219)	Female (n = 399)	≤45 years (n = 332)	≥46 years (n = 294)	Hospital (n = 197)	Practice (n = 384)	German (n = 418)	French (n = 192)	Italian (n = 29)	Head of department (n = 36)	Junior resident (n = 59)
Training in CM	(n = 612)	(n = 216)	(n = 387)	(n = 325)	(n = 286)	(n = 195)	(n = 378)	(n = 401)	(n = 182)	(n = 29)	(n = 36)	(n = 59)
Yes	138 (23%)	46 (21%)	89 (23%)	57 (18%)	81 (28%)	26 (13%)	103 (27%)	106 (26%)	25 (14%)	7 (24%)	5 (14%)	8 (14%)
No	474 (77%)	170 (79%)	298 (77%)	268 (82%)	205 (72%)	169 (87%)	275 (73%)	295 (74%)	157 (86%)	22 (76%)	31 (86%)	51 (86%)
CM certificate	(n = 603)	(n = 215)	(n = 380)	(n = 323)	(n = 279)	(n = 194)	(n = 370)	(n = 396)	(n = 178)	(n = 29)	(n = 36)	(n = 59)
Yes	47 (8%)	17 (8%)	29 (8%)	16 (5%)	31 (11%)	11 (6%)	35 (9%)	36 (9%)	8 (4%)	3 (10%)	2 (6%)	3 (5%)
No	556 (92%)	198 (92%)	351 (92%)	307 (95%)	248 (89%)	183 (94%)	335 (91%)	360 (91%)	170 (96%)	26 (90%)	34 (94%)	56 (95%)
Asks patients about CM use	(n = 609)	(n = 217)	(n = 384)	(n = 326)	(n = 282)	(n = 195)	(n = 373)	(n = 400)	(n = 180)	(n = 29)	(n = 36)	(n = 58)
Yes	283 (46%)	112 (52%)	167 (43%)	140 (43%)	143 (51%)	107 (55%)	157 (42%)	200 (50%)	72 (40%)	11 (38%)	27 (75%)	25 (43%)
No	326 (54%)	105 (48%)	217 (57%)	186 (57%)	139 (49%)	88 (45%)	216 (58%)	200 (50%)	108 (60%)	18 (62%)	9 (25%)	33 (57%)
Is asked by parents about CM therapies	(n = 597)	(n = 211)	(n = 377)	(n = 316)	(n = 280)	(n = 191)	(n = 368)	(n = 402)	(n = 166)	(n = 29)	(n = 34)	(n = 58)
Yes, frequently	62 (10%)	21 (10%)	41 (11%)	24 (8%)	38 (13%)	7 (4%)	53 (14%)	43 (11%)	16 (10%)	3 (10%)	4 (12%)	1 (2%)
Yes, sometimes	255 (43%)	92 (44%)	158 (42%)	135 (43%)	120 (43%)	67 (35%)	173 (47%)	173 (43%)	74 (44%)	8 (28%)	11 (32%)	25 (43%)
Yes, seldom	261 (44%)	88 (42%)	169 (45%)	146 (46%)	114 (41%)	109 (57%)	132 (36%)	178 (44%)	65 (39%)	18 (62%)	18 (53%)	29 (50%)
No	19 (3%)	10 (5%)	9 (2%)	11 (3%)	8 (3%)	8 (4%)	10 (3%)	8 (2%)	11 (7%)	0	1 (3%)	3 (5%)
Offers any form of CM*	(n = 608)	(n = 216)	(n = 383)	(n = 324)	(n = 283)	(n = 195)	(n = 374)	(n = 399)	(n = 180)	(n = 29)	(n = 36)	(n = 59)
Yes	96 (16%)	49 (23%)	115 (30%)	74 (23%)	95 (34%)	24 (12%)	139 (37%)	95 (24%)	67 (37%)	8 (28%)	8 (22%)	5 (8%)
No, not meaningful	118 (19%)	68 (31%)	49 (13%)	56 (17%)	62 (22%)	35 (18%)	72 (19%)	75 (19%)	38 (21%)	6 (21%)	13 (36%)	8 (14%)
No, insufficient knowledge	340 (56%)	109 (50%)	225 (59%)	206 (64%)	134 (47%)	136 (70%)	179 (48%)	245 (61%)	79 (44%)	16 (55%)	16 (44%)	43 (74%)
No, not possible at workplace	54 (9%)	13 (6%)	40 (10%)	38 (12%)	15 (5%)	38 (19%)	12 (3%)	42 (10%)	10 (6%)	2 (7%)	4 (11%)	15 (25%)
Refers patients to CM practitioners	(n = 589)	(n = 206)	(n = 373)	(n = 312)	(n = 276)	(n = 187)	(n = 374)	(n = 398)	(n = 179)	(n = 29)	(n = 34)	(n = 57)
Yes, regularly	47 (8%)	21 (10%)	25 (7%)	21 (7%)	26 (9%)	7 (4%)	38 (10%)	22 (6%)	24 (13%)	2 (7%)	3 (9%)	0
Yes, sometimes	266 (45%)	84 (41%)	175 (47%)	124 (40%)	141 (51%)	66 (35%)	186 (50%)	180 (45%)	80 (45%)	13 (45%)	15 (44%)	17 (30%)
No	276 (47%)	101 (49%)	173 (46%)	167 (53%)	109 (39%)	114 (61%)	150 (40%)	196 (49%)	75 (42%)	14 (48%)	16 (47%)	40 (70%)
Self-use of CM	(n = 599)	(n = 211)	(n = 380)	(n = 318)	(n = 280)	(n = 190)	(n = 370)	(n = 391)	(n = 179)	(n = 29)	(n = 34)	(n = 57)
yes	347 (58%)	84 (40%)	259 (68%)	200 (63%)	146 (52%)	105 (55%)	222 (60%)	232 (59%)	99 (55%)	16 (55%)	14 (41%)	35 (61%)
no	252 (42%)	127 (60%)	121 (32%)	118 (37%)	134 (48%)	85 (45%)	148 (40%)	159 (41%)	80 (45%)	13 (45%)	20 (58%)	22 (39%)
Family use of CM	(n = 604)	(n = 214)	(n = 377)	(n = 318)	(n = 281)	(n = 192)	(n = 370)	(n = 391)	(n = 180)	(n = 29)	(n = 35)	(n = 57)
Yes	308 (51%)	95 (44%)	204 (54%)	159 (50%)	143 (51%)	86 (45%)	196 (53%)	201 (51%)	88 (49%)	14 (48%)	19 (54%)	29 (51%)
No	296 (49%)	119 (56%)	173 (46%)	159 (50%)	138 (49%)	106 (55%)	174 (47%)	190 (49%)	92 (51%)	15 (52%)	16 (46%)	28 (49%)
Interest in CM training	(n = 604)	(n = 215)	(n = 380)	(n = 319)	(n = 284)	(n = 192)	(n = 373)	(n = 396)	(n = 179)	(n = 29)	(n = 36)	(n = 57)
Yes	380 (63%)	107 (50%)	268 (71%)	225 (71%)	154 (54%)	123 (64%)	234 (63%)	238 (60%)	126 (70%)	16 (55%)	21 (58%)	39 (68%)
No	224 (37%)	108 (50%)	112 (29%)	94 (29%)	130 (46%)	69 (36%)	139 (37%)	158 (40%)	53 (30%)	13 (45%)	15 (42%)	18 (32%)
Interest group for integrative paediatrics	(n = 612)	(n = 215)	(n = 388)	(n = 323)	(n = 288)	(n = 194)	(n = 378)	(n = 402)	(n = 181)	(n = 29)	(n = 35)	(n = 57)
Yes	437 (71%)	133 (62%)	299 (77%)	240 (74%)	196 (68%)	148 (76%)	261 (69%)	284 (71%)	141 (78%)	12 (41%)	23 (66%)	44 (77%)
No	175 (29%)	82 (38%)	89 (23%)	83 (26%)	92 (32%)	45 (23%)	117 (31%)	118 (29%)	40 (22%)	17 (59%)	12 (34%)	13 (23%)
Contribution to CM research	(n = 584)	(n = 210)	(n = 366)	(n = 310)	(n = 273)	(n = 185)	(n = 363)	(n = 383)	(n = 173)	(n = 28)	(n = 34)	(n = 56)
Yes	244 (42%)	78 (37%)	165 (45%)	154 (50%)	90 (33%)	88 (48%)	141 (39%)	157 (41%)	75 (43%)	12 (43%)	14 (41%)	32 (57%)
No	340 (58%)	132 (63%)	201 (55%)	156 (50%)	183 (67%)	97 (52%)	222 (61%)	226 (59%)	98 (57%)	16 (57%)	20 (59%)	24 (43%)

CM = complementary medicine. * "yes" and "no" analysed separately, as some gave multiple answers for "no".

Among those paediatricians in the overall sample of our study who did not offer CM, around one quarter (23%) considered CM not meaningful/reasonable, while the majority (66%) stated insufficient knowledge in CM as their primary reason for not offering CM. This situation could be improved through further information and training programmes, as mentioned above.

As also shown in related studies [13, 15, 16], the percentage of paediatricians in Switzerland referring patients to CM practitioners (53%) is substantially higher than the number providing any form of CM themselves (16%). We did not assess whether this referral practice reflects a positive attitude towards CM from the respective paediatricians, or whether it can be explained by the demands of the families in search of CM for their children. About half (47%) the paediatricians asked patients about their CM use. This is high compared to international findings [11–16], but still low in light of the high CM use by families.

As in other countries [11–13, 15, 16], we found strong demand for CM among paediatricians in Switzerland, with 53% using some form of CM for themselves and 57% reporting CM use by members of their immediate family. It must be noted that we did not define a time period for the personal use of CM (e.g. frequency within one year, lifetime). Therefore, it may well be possible that the numbers in our survey reflect the professionals' lifetime use, which would explain why the rate is much higher than that of the general population in Switzerland, as investigated in the Swiss Health Surveys [5].

Findings from CM research in adults cannot simply be transferred to children. Thus, there is a strong need for scientific research on complementary and integrative medicine for children [3]. This can only be realised by an increase effort in favour of paediatric CM research through existing research structures and institutions, and by establishing new ones. In this context, it is promising that 244 paediatricians from all parts of Switzerland (42% of the respondents to this question) expressed a willingness to contribute to research projects by qualified research institutions on complementary and integrative medicine for children. Vlieger et al. [15] already found a positive attitude towards CM research in their study, where 52% of paediatricians were willing to participate. The medical and socio-political situation in Switzerland seems particularly suitable for establishing a national scientific research community for paediatric CM research. The initiation and coordination of this research is an important task for the SSP's official working group for paediatric integrative medicine in Switzerland (Swiss Interest Group for Integrative Paediatrics, SIGIP) [25], which was established in 2017 based on the model of the AAP's Section on Integrative Medicine [26]. It is noteworthy that 71% of respondents would appreciate such a group and the majority of these (73%) supported its establishment within the SSP.

Studies like this survey have several limitations. A general problem with surveys is the low response rate. We achieved a response rate of 34%, which is above the mean response rate (30%) for similar surveys of paediatricians on CM published previously [11–17]. With a sample size of 640, our survey is one of the largest on this topic [11–17]. While we sent only one reminder, higher response

rates could have been realised with more reminders, as shown in the AAP survey from 2001 (one invitation and five reminders, response rate 46%) [12].

Considering the response rate of our survey and the prior selection to include only paediatricians who were members of the SSP, the question of representativeness gains importance. We therefore assessed the representativeness of our study sample compared to the national register of the Swiss Medical Association (FMH) and found a high degree of comparability in terms of major characteristics. Except for having more younger (< 35 years) and fewer older (> 65 years) paediatricians, as well as more paediatricians in training, in our sample – a finding that is due to slight differences between the study population and the population of paediatricians registered to the Swiss Medical Association – there were no important differences between the two groups. According to our subgroup analysis, these differences did not affect the overall results uniformly. Having more paediatricians of younger age and still in training might have resulted in a lower frequency for CM training, offer of CM and referral of patients to CM providers, and a higher frequency for personal use of CM, interest in CM training and willingness to contribute to CM research. With this minor limitation, the results of our survey can be generalised to the whole population of paediatricians in Switzerland. The fact that interest in CM training and research is higher among younger paediatricians in training is promising for the future development of integrative paediatrics in Switzerland.

Results that are self-reported rather than observed carry the risk of response bias due to over- or underreporting of the true attitudes towards and practice of CM. Paediatricians with an interest or a generally positive attitude towards CM are more likely to have participated in this survey, thereby skewing the results. The relatively high rate of CM use among respondents, both for themselves and their families, point in this direction.

As in other countries [27, 28], the outpatient care for children and adolescents in Switzerland is provided not only by paediatricians, but also by general practitioners and family physicians [29]. These were not included in our study, and this affects how well our findings can be generalised, especially for the question of whether strong demand for CM for children is met by a corresponding offer of CM for children in Switzerland. However, we know from a previous study among general practitioners in Switzerland that 30% of them offer CM to their patients and 63% refer patients to CM practitioners [5]. This is higher than the findings of our study (16% and 53%, respectively). Based on these findings, children are not underserved with respect to the supply of CM if consulting a general practitioner instead of a paediatrician.

According to our study, acupuncture/TCM, anthroposophic medicine, homeopathy and phytotherapy are the most prevalent CM methods among paediatricians in Switzerland. This might reflect the medical history, the cultural context and the socio-political situation in Switzerland, as these are the four CM methods officially recognised by the Swiss health care authorities [9]. However, it should be noted that CM is a general term summarising a large variety of different preventive and therapeutic methods. It is the medical and sociocultural background of a country that

determines which CM methods are most prevalent there, and whether they are practised alone or in conjunction with conventional medicine in an integrative setting. This holds true for paediatrics, as shown by the different surveys published on this question [11–17]. Comparing the results of studies from different countries is therefore challenging, and should be limited to the overall findings.

Conclusion

In a representative sample of paediatricians in Switzerland, the overall attitude towards CM was positive, emphasised by great interest in CM training, willingness to contribute to CM research and, in particular, by the high rate of paediatricians using CM for themselves and their families. However, given the strong demand for CM for children, the rate of paediatricians offering CM is rather low, despite the official recognition of CM in Switzerland. Among the various reasons for this, insufficient knowledge and institutional barriers deserve special attention. The paediatricians' great interest in CM training and support for CM research offer key elements for the future development of complementary and integrative medicine for children in Switzerland.

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References

- National Center for Complementary and Integrative Health [Internet]. Complementary, alternative, or integrative health: what's in a name? [cited 2018 Nov 22]. Available from: <https://nccih.nih.gov/health/integrative-health>
- Academic Consortium for Integrative Medicine & Health [Internet]. Definition of integrative medicine and health [cited 2018 Nov 22]. Available from: <https://imconsortium.org/about/introduction/>
- McClafferty H, Vohra S, Bailey M, Brown M, Esparham A, Gerstbacher D, et al.; SECTION ON INTEGRATIVE MEDICINE. Pediatric integrative medicine. *Pediatrics*. 2017;140(3): . <http://dx.doi.org/10.1542/peds.2017-1961>. PubMed.
- Wolf U, Maxion-Bergemann S, Bornhöft G, Matthiessen PF, Wolf M. Use of complementary medicine in Switzerland. *Forsch Komplement Med*. 2006;13(Suppl 2):4–6 . <http://dx.doi.org/10.1159/000093488>. PubMed.
- Klein SD, Torchetti L, Frei-Erb M, Wolf U. Usage of complementary medicine in Switzerland: results of the Swiss health survey 2012 and development since 2007. *PLoS One*. 2015;10(10): . <http://dx.doi.org/10.1371/journal.pone.0141985>. PubMed.
- Moenkhoff M, Baenziger O, Fischer J, Fanconi S. Parental attitude towards alternative medicine in the paediatric intensive care unit. *Eur J Pediatr*. 1999;158(1):12–7 . <http://dx.doi.org/10.1007/s004310051001>. PubMed.
- Zuzak TJ, Zuzak-Siegrist I, Simões-Wüst AP, Rist L, Staubli G. Use of complementary and alternative medicine by patients presenting to a Paediatric Emergency Department. *Eur J Pediatr*. 2009;168(4):431–7 . <http://dx.doi.org/10.1007/s00431-008-0765-3>. PubMed.
- Lemann D. The way forward. *Schweiz Arzteztg*. 2016;97(37):1260–1. [German].
- Bundesamt für Gesundheit [Internet]. Komplementärmedizin: Vergütung neu geregelt [cited 2018 Nov 22]. Available from: <https://www.bag.admin.ch/bag/de/home/das-bag/aktuell/news/news-16-06-2017.html>
- Schweizerisches Institut für Weiter- und Fortbildung [Internet]. Fähigkeitsausweise [cited 2018 Nov 22]. Available from: <http://www.fmh.ch/bildung-siwf/fachgebiete/fachigkeitsausweise.html>
- Sikand A, Laken M. Pediatricians' experience with and attitudes toward complementary/alternative medicine. *Arch Pediatr Adolesc Med*. 1998;152(11):1059–64 . <http://dx.doi.org/10.1001/archpedi.152.11.1059>. PubMed.
- Kemper KJ, O'Connor KG. Pediatricians' recommendations for complementary and alternative medical (CAM) therapies. *Ambul Pediatr*. 2004;4(6):482–7 . <http://dx.doi.org/10.1367/A04-050R.1>. PubMed.
- Sawni A, Thomas R. Pediatricians' attitudes, experience and referral patterns regarding Complementary/Alternative Medicine: a national survey. *BMC Complement Altern Med*. 2007;7(1):18 . <http://dx.doi.org/10.1186/1472-6882-7-18>. PubMed.
- Ziideen KA, Misra SM. Complementary and integrative medicine attitudes and perceived knowledge in a large pediatric residency program. *Complement Ther Med*. 2018;37:133–5. Published online February 18, 2018 . <http://dx.doi.org/10.1016/j.ctim.2018.02.004>. PubMed.
- Vlieger AM, van Vliet M, Jong MC. Attitudes toward complementary and alternative medicine: a national survey among paediatricians in the Netherlands. *Eur J Pediatr*. 2011;170(5):619–24 . <http://dx.doi.org/10.1007/s00431-010-1331-3>. PubMed.
- Jong MC, van Vliet M, Huttenhuis S, van der Veer D, van den Heijkant S. Attitudes toward integrative paediatrics: a national survey among youth health are physicians in The Netherlands. *BMC Complement Altern Med*. 2012;12(1):4 . <http://dx.doi.org/10.1186/1472-6882-12-4>. PubMed.
- Al Saadoon MA, Al Jafari MS, Al Dhuyani BD, Rizvi S. Factors associated with pediatrician attitudes over the use of complementary and traditional medicine on children in Muscat, Oman. *Int J Health Policy Manag*. 2015;4(2):65–8 . <http://dx.doi.org/10.15171/ijhpm.2015.11>. PubMed.
- Zuzak TJ, Boňková J, Careddu D, Garami M, Hadjipanayis A, Jazbec J, et al. Use of complementary and alternative medicine by children in Europe: published data and expert perspectives. *Complement Ther Med*. 2013;21(Suppl 1):S34–47 . <http://dx.doi.org/10.1016/j.ctim.2012.01.001>. PubMed.
- Italia S, Wolfenstetter SB, Teuner CM. Patterns of complementary and alternative medicine (CAM) use in children: a systematic review. *Eur J Pediatr*. 2014;173(11):1413–28 . <http://dx.doi.org/10.1007/s00431-014-2300-z>. PubMed.
- McCann LJ, Newell SJ. Survey of paediatric complementary and alternative medicine use in health and chronic illness. *Arch Dis Child*. 2006;91(2):173–4 . <http://dx.doi.org/10.1136/adc.2004.052514>. PubMed.
- Widmer M, Dönges A, Wapf V, Busato A, Herren S. The supply of complementary and alternative medicine in Swiss hospitals. *Forsch Komplement Med*. 2006;13(6):356–61. PubMed.
- Dégion-Fischer A, Barth J, Ausfeld-Hafter B. Komplementärmedizin in Schweizer praxen der grundversorgung [Complementary and alternative medicine in primary care in Switzerland]. *Forsch Komplement Med*. 2009;16(4):251–5. Article in German.
- Carruzzo P, Graz B, Rodondi PY, Michaud PA. Offer and use of complementary and alternative medicine in hospitals of the French-speaking part of Switzerland. *Swiss Med Wkly*. 2013;143: . <http://dx.doi.org/10.4414/smw.2013.13756>. PubMed.
- Joint Commission of the Swiss Medical Schools [Internet]. Principal relevant objectives and framework for integrated learning and education in Switzerland (PROFILES), March 2017 [cited 2018 Nov 22]. Available from: <http://www.profilesmed.ch>
- Huber BM, Ogal M, Hasselmann O, von Schoen-Angerer T. Schweizer Interessengruppe für integrative Pädiatrie. *Paediatrica*. 2017;28(3):23–4. [German].
- American Academy of Pediatrics [Internet]. Section on integrative medicine [cited 2018 Nov 22]. Available from: <https://www.aap.org/en-us/about-the-aap/Committees-Councils-Sections/Section-on-Integrative-Medicine/Pages/default.aspx>
- Virtanen JJ, Berntsson LT, Lahelma E, Köhler L. Children's use of general practitioner services in the five Nordic countries. *J Epidemiol Community Health*. 2006;60(2):162–7 . <http://dx.doi.org/10.1136/jech.2005.042390>. PubMed.
- Frese T, Klauss S, Herrmann K, Sandholzer H. Children and adolescents as patients in general practice - the reasons for encounter. *J Clin Med Res*. 2011;3(4):177–82 . <http://dx.doi.org/10.4021/jocmr597w>. PubMed.
- Jenni OG, Sennhauser FH. Child health care in Switzerland. *J Pediatr*. 2016;177S:S203–12. PubMed.

Appendix 1

Questionnaire in German

Appendix 1 is available as a separate file for downloading at <https://smw.ch/en/article/doi/smw.2019.20091/>